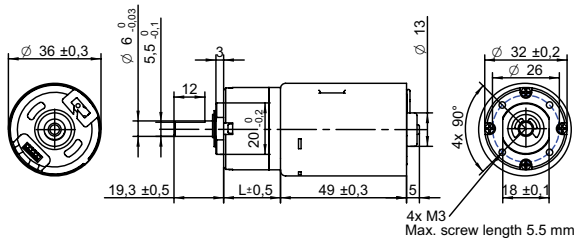
PBT3649-24 | Ø 36 mm | BRUSHLESS DC PLANETARY GEAR MOTOR

DRAWING (mm)
EXTERNAL DRIVER



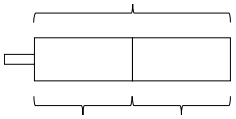
PHOTO

MODEL NO. DESIGNATION

PBT3649 - VOLTAGE - GEAR RATIO

Example: PBT3649-24-4

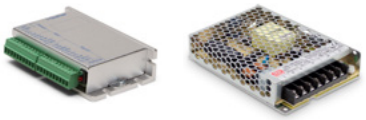
GEAR MOTOR



GEARBOX **BLDC* MOTOR**

*BRUSHLESS DC

OPTIONS DRIVERS AND POWER SUPPLIES



● C = customizations are offered on demand even for smaller quantities. Typical customizations are indicated with a green dot at column end. Please contact us for any customization request.

GEAR MOTOR DATA																C
Gear ratio		4:1	5:1	14:1	19:1	27:1	35:1	51:1	71:1	100:1	139:1	189:1	264:1	516:1	721:1	939:1
Nominal torque | ^ gearbox limit	Ncm	12	15	37	39^	59^	59^	78^	78^	98^	98^	120^	120^	120^	120^	120^
Nominal speed	rpm	1300	1000	370	270	190	150	100	73	52	37	27	20	10	7	5
Peak torque	Ncm	59	59	120	120	180	180	240	240	290	290	350	350	350	350	350
Nominal power	W	16	16	14	14	14	14	12	12	12	12	10	10	10	10	10
Gearbox efficiency	%	80	80	70	70	70	70	60	60	60	60	50	50	50	50	50
Gearbox length | L	mm	20.6	20.6	27	27	27	27	33.4	33.4	33.4	33.4	39.8	39.8	39.8	39.8	39.8
Weight	g	300	300	320	320	320	320	340	340	340	340	370	370	370	370	370

GEAR MOTOR COMBINED DATA			C
Service life	hrs	5000	
Performance tolerances	%	± 15	
Operating temperature	°C	-10 to 60	●
IP rating		IP30	
Manufacturing standard		ISO9001 | ISO 14001 | IATF 16949	
Compliance		RoHS and REACH	
Label CE | UL		CE no | UL no	

GEARBOX SHAFT DATA			C
Radial play | thrust play	mm	≤ 0.05 | ≤ 0.3	
Shaft axial load	N	29	
Radial load	N	79	
Press fit force max.	N	150	
Backlash no load	°	≤ 3	
Bearing type | shaft material		Ball bearing | SCM435	
Motor pinion material | shape		Steel | straight	●

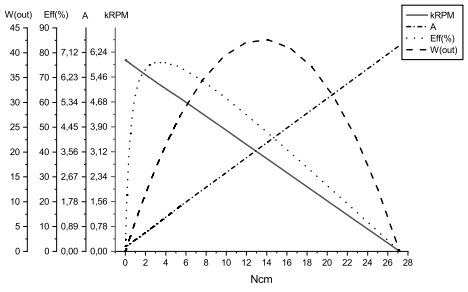
GEARBOX-SPECIFIC DATA			C
Material gear stage		Ratio 5:1 sintered steel	●
Material > 5:1 ratio / stage		POM first + sintered steel	●
Assembly front bell	mm	Maximum screw depth 5.5	

BRUSHLESS DC MOTOR DATA			C
Brushless DC motor model: Transmotec BT3649-24			
Driver type		External	
Nominal voltage	V	24	
Commutator (hall) voltage	V	3.3~5	
No load speed	rpm	6000	
No load current	mA	160	
Nominal speed	rpm	5200	●
Nominal torque	mNm	37	
Nominal current	A	1.1	
Start/Stall torque	mNm	280	
Start/Stall current	A	7.8	
Max. efficiency	%	76	
Nominal power	W	20	
Terminal resistance	Ω	2	
Terminal inductance	mH	1.8	
Torque constant	mNm/A	36	
Speed constant	rpm/V	250	
Speed/ torque gradient	rpm/mNm	140	
Rotor inertia	gcm²	45~49	

BRUSHLESS DC MOTOR OTHER DATA			C
Number of pole pairs		2	
Number of phases		3	
Max. winding temperature	°C	150	
Motor insulation class		A	
Slot pole pairs		6S4P	
Rotor magnet		BNM-8	
Hall sensors and power harness length	mm	160 ± 10	●
Power harness end connector		A2502X-03P	●
Power harness		UL3132 22AWG 300V 150°C	●
Hall sensors harness end connector		A1501H00-5P	●
Hall sensors harness		UL1007 26AWG 300V 80°C	●
Housing material		SECD-0 1.0T	
Magnet material		Bonding NdFeB	
Rotor balancing grade		G6.3	

GEAR MOTOR RANGE STANDARD AVAILABILITY			
Nominal voltage	V	12 | 24	*See seperate data sheet*
Nominal power	W	1.6 - 39	*See seperate data sheet*
Diameter	mm	28 - 42	*See seperate data sheet*

BRUSHLESS DC MOTOR DATA DIAGRAM



ACCESSORIES

Power supplies LRS V 3.3 - 48 *See separate data sheet*

CABLE AND PIN CONFIGURATION EXTERNAL DRIVER C

Power		Hall	
Phase	Cable color	Phase	Cable color
U	White	HU	Green
V	Brown	HV	Blue
W	Grey	HW	Yellow
		+5V	Red
		GND	Black

EU: +46 8 792 35 30
US: +1-339-234-9200
info@transmotec.com